IN THE CLAIMS:

The text of all pending claims (including withdrawn claims) is set forth below. Cancelled and not entered claims are indicated with claim number and status only. The claims as listed below show added text with underlining and deleted text with ~~strikethrough~~. The status of each claim is indicated with one of (original), (currently amended), (cancelled), (withdrawn), (new), (previously presented), or (not entered).

Please AMEND claims 24, 33 and 34 and CANCEL claim 23 without prejudice or disclaimer in accordance with the following:

1. (Previously presented) An optical amplifying apparatus comprising:

optical amplifying means for amplifying a wavelength-division multiplexed optical signal wherein a plurality of optical signals having different wavelengths are wavelength-multiplexed; and

input light controlling means for inputting, to said optical amplifying means, probe light that serves to keep an optical power of light to be input to said optical amplifying means constant in accordance with a change in a number of optical signals of said wavelength-division multiplexed optical signal, wherein said input light controlling means comprises:

a light source for generating said probe light,

combining means for combining said probe light with light to be input to said optical amplifying means,

detecting means for detecting said optical power of light to be input to said optical amplifying means, and

controlling means for controlling said optical power of said probe light so that an output from said detecting means becomes approximately constant.

2. (Cancelled)

3. (Original) An optical amplifying apparatus according to claim 1, further comprising rejecting means for eliminating said probe light from light amplified by said optical amplifying means.

4. (Previously presented) An optical amplifying apparatus according to claim 1, wherein said light source generates probe light wherein laser beams having different wavelengths are wavelengths multiplexed.

5. (Previously presented) An optical amplifying apparatus according to claim 1, wherein:

said light source is a semiconductor laser; and

said controlling means controls the optical power of said probe light by adjusting a driving current of said semiconductor laser, so that an output from said detecting means becomes approximately constant.

6. (Previously presented) An optical amplifying apparatus according to claim 1, wherein said controlling means is an optical attenuator for attenuating the optical power of said probe light output from said light source.

7. (Previously presented) An optical amplifying apparatus according to claim 1, wherein said controlling means is an optical amplifier for amplifying the optical power of said probe light output from said light source.

8. (Previously presented) An optical amplifying apparatus according to claim 1, further comprising a memory for sorting a maximum operable multiplex number of said wavelength-division multiplexed optical signal, and wherein

said controlling means controls the optical power of said probe light based on a difference between a value of an output from said detecting means and a reference value greater than or equal to a value of the output from said detecting means that is obtained when a number of multiplexed optical signals in said wavelength-division multiplexed optical signal is equal to the maximum operable multiplex number.

9. (Previously presented) An optical amplifying apparatus according to claim 1,

further comprising a weighting filter provided prior to said detecting means so set that it has a maximum transmittance rate at a central wavelength in a gain band or at a wavelength of a maximum gain of said optical amplifying means, and whose transmittance rate decreases as a difference between the wavelength of said probe light and the central wavelength increases.

10. (Cancelled)

11. (Cancelled)

12. (Cancelled)

13. (Cancelled)

14. (Cancelled)

15. (Cancelled)

16. (Cancelled)

17. (Cancelled)

18. (Cancelled)

19. (Cancelled)

20. (Cancelled)

21. (Cancelled)

22. (Cancelled)

23. (Cancelled)

24. (Currently Amended) An optical amplifying method of amplifying a wavelength-division multiplexed optical signal wherein a plurality of optical signals having different wavelengths are wavelengths-multiplexed, comprising:

combining input light with probe light and outputting the combined light to optical amplifying means;

detecting the optical power of the combined light;

controlling an optical power of said probe light to be input to said optical amplifying means for amplifying said wavelength-division multiplexed optical signal in accordance with an increase or a decrease in the number of channels of said wavelength-division multiplexed optical signal; and

keeping an optical power of the combined light to be input to said optical amplifying means approximately constant.

25. (Previously presented) An optical amplifying apparatus comprising:

an optical amplifier amplifying a wavelength-division multiplexed optical signal wherein a plurality of optical signals having different wavelengths are wavelength-multiplexed; and

an input light controller inputting, to said optical amplifier, probe light that serves to keep an optical power of light to be input to said optical amplifier constant in accordance with a change in a number of optical signals of said wavelength-division multiplexed optical signal, wherein said input light controller comprises:

a light source generating said probe light,

a combiner combining said probe light with light to be input to said optical amplifier to thereby produce a combined light,

a detector detecting an optical power of the combined light, and

a controller controlling an optical power of said probe light so that the optical power detected by said detector becomes approximately constant.

26. (Previously presented) The optical amplifying apparatus according to claim 25, further comprising a rejector eliminating said probe light from light amplified by said optical amplifier.

27. (Previously presented) The optical amplifying apparatus according to claim 25, wherein said light source generates probe light wherein laser beams having different wavelengths are wavelengths multiplexed.

28. (Previously presented) The optical amplifying apparatus according to claim 25, wherein:

said light source is a semiconductor laser; and

said controller controls the optical power of said probe light by adjusting a driving current of said semiconductor laser, so that the output from said detector becomes approximately constant.

29. (Previously presented) An optical amplifying apparatus according to claim 25, wherein said controller is an optical attenuator attenuating the optical power of said probe light output from said light source.

30. (Previously presented) The optical amplifying apparatus according to claim 25, wherein said controller is an optical amplifier amplifying the optical power of said probe light output from said light source.

31. (Previously presented) The optical amplifying apparatus according to claim 25, further comprising a memory sorting a maximum operable multiplex number of said wavelength-division multiplexed optical signal, and wherein

said controller controls the optical power of said probe light based on a difference between a value of the output from said detector and a reference value greater than or equal to a value of the output from said detector obtained when a number of multiplexed optical signals in said wavelength-division multiplexed optical signal is equal to the maximum operable multiplex number.

32. (Previously presented) The optical amplifying apparatus according to claim 25, further comprising a weighting filter provided prior to said detector set so that it has a maximum transmittance rate at the central wavelength in a gain band or at the wavelength of a maximum gain of said optical amplifier, and whose transmittance rate decreases as a difference between the wavelength of said probe light and the central wavelength increases.

33. (Currently Amended) An apparatus comprising:

a combiner combining a wavelength division multiplexed (WDM) light with probe light, to thereby produce a combined light, the WDM light including a plurality of optical signals multiplexed together;

an optical amplifier receiving the combined light and amplifying the WDM light in the combined light;

a detector detecting an optical power level of the combined light; and

a controller controlling a power level of the probe light so that ~~a~~the power level of the combined light as received by the optical amplifier is maintained constant in accordance with changes in a number of optical signals in the WDM light.

34. (Currently Amended) An apparatus comprising:

means for combining a wavelength division multiplexed (WDM) light with probe light, to thereby produce a combined light, the WDM light including a plurality of optical signals multiplexed together;

an optical amplifier receiving the combined light and amplifying the WDM light in the combined light;

a detector detecting an optical power level of the combined light; and

means for controlling a power level of the probe light so that ~~a~~the power level of the combined light as received by the optical amplifier is maintained constant in accordance with changes in a number of optical signals in the WDM light.